Prepared for

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Groundwater Monitoring Report

NL Industries Superfund Site
Pedricktown, New Jersey

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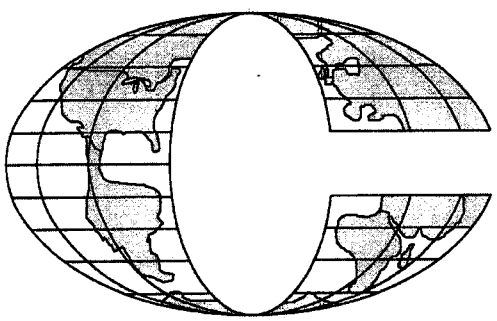

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1. INTRODUCTION

On behalf of the Interim Pedricktown Site Group (Group), CSI Environmental, LLC (CSI) prepared the following report to document the results of the groundwater monitoring activities performed in January 2004 at the NL Industries Superfund Site in Pedricktown, New Jersey. CSI performed the groundwater monitoring activities in accordance with the 27 October 2003 *Groundwater Monitoring Plan for the NL Industries Superfund Site,* prepared by CSI. The activities included (i) installing four new monitoring wells at the site, (ii) abandoning five damaged monitoring wells, (iii) repairing two existing monitoring wells, and (iv) sampling 23 monitoring wells and six taps at residential/commercial properties. The results of the groundwater monitoring activities performed in January 2004 are summarized herein. A location plan is provided as Figure 1.

The United States Environmental Protection Agency (EPA) required the remediation of soil, sediment and groundwater at the site. Pursuant to a Consent Decree issued by EPA, the Group conducted remedial activities for soil and sediment, which were completed in May 2003. The remedial action included the excavation, stabilization and off-site disposal of soil, sediment and debris that contained lead at concentrations above the remedial action objective. During the performance of the remedial activities for soil and sediment, several groundwater-monitoring wells were accidentally damaged or destroyed. Two monitoring wells, MW-29 and MW-30, were damaged and abandoned during the RA and two monitoring wells, KS and KD, were destroyed. Several monitoring wells (i.e. HS, IS, JD, RS, and T-C) were also damaged.

Review of data obtained prior to the performance of the remedy for soil and sediment indicated that significant improvement in groundwater quality had occurred without active groundwater remediation. Therefore, the Group and EPA are currently re-evaluating the EPA-specified remedy for groundwater. The most recent monitoring event prior to January 2004 was performed in 1998, prior to the implementation of the RA for soil and sediment. The purposes of the January 2004 groundwater-monitoring event were to update the groundwater data, evaluate potential changes that may have occurred in groundwater since 1998, and to provide additional information useful in establishing recommendations for future groundwater activities at the site.

CSI compared the results of the January 2004 sampling event to data previously obtained from the site and documented further significant improvement in groundwater quality. As described herein, groundwater quality at the site has steadily improved since 1983 and the trend of improving groundwater quality has continued since the last sampling event was performed in 1998.

2. BACKGROUND

The NL Industries site is located on Pennsgrove-Pedricktown Road in Pedricktown, New Jersey. The site was formerly used for the reclamation of lead. Groundwater quality in three zones (the unconfined Cape May formation, first semi-confined zone of the Raritan formation, and second confined zone of the Raritan formation) has been evaluated periodically since 1983. Elevated levels of site related constituents were limited in extent to the uppermost zone, the unconfined aquifer. Groundwater quality improved significantly between 1983 and 1998 as documented in *Phase I Groundwater Evaluation Technical Memorandum* [GeoSyntec Consultants, 1997] and *Phase II Groundwater Evaluation Technical Memorandum* [GeoSyntec Consultants, 2000]. GeoSyntec Consultants indicated in both documents that the mechanisms responsible for natural improvement in groundwater quality were effective and indicated that the pump-and-treat remedy previously specified for the site by the EPA would not be effective and was not necessary.

Prior to January 2004, the Group previously performed groundwater evaluations between 1997 and 1999. The results were presented in the Phase I and Phase II Reports. In both documents, GeoSyntec Consultants concluded that groundwater quality at the site had previously been impacted by site-related operations and that groundwater quality had improved significantly following the termination of operations at the site. As described in the Phase II Report, GeoSyntec recommended that consideration be given to evaluating possible remediation alternatives, including monitored natural attenuation and injection of alkalinity to enhance the removal of constituents from groundwater in combination with monitoring. Additionally, the results of an aquifer test indicated that attempting to extract metals from the subsurface by pumping groundwater would be ineffective. Furthermore, residential wells were previously sampled and were determined to have been unaffected by site-related constituents. Even though lead was detected in several tap water samples, it was not site-related; rather it was attributed to aging plumbing.

3. TECHNICAL APPROACH

CSI monitored groundwater quality during the January 2004 event using sampling and analytical techniques that were generally consistent with those used at the site from 1997 through 1999. The procedures are described in the *Sampling, Analysis and Monitoring Plan* (SAMP) and *Quality Assurance Project Plan* (QAPP), which were included and previously approved by EPA as part of the *Remedial Design Work Plan* [GeoSyntec, 1997]. CSI's goal was to obtain samples of groundwater that were representative of aquifer conditions using low-impact techniques described in *Low-Flow (Minimal Draw Down) Ground-Water Sampling Procedures* [Puls and Barcelona, 1998]. Groundwater monitoring activities are described below.

3.1 Well Installation, Abandonment and Repair

Prior to their destruction during remedial activities for soil at the site, monitoring wells KS and KD were located in an area, in the central portion of the site, where lead and cadmium were relatively highly concentrated in groundwater relative to other areas. CSI installed two new replacement wells at the approximate former locations of KS and KD to provide a means to continue monitoring groundwater quality in the central portion of the site. One of the new wells was installed to a depth of approximately 15 feet (i.e. KSR) and the other to a depth of approximately 24 feet (i.e. KDR). CSI also replaced monitoring wells JD and 30 with new wells, JDR and 30R to depths of approximately 27 and 29 feet, respectively. All new wells were constructed with 10 feet of 0.010-inch slot well screen. Well locations are shown on Figure 2.

CSI also permanently abandoned, without replacement, damaged monitoring wells HS, IS, RS, and T-C, in accordance with New Jersey Department of Environmental Protection (NJDEP) regulations. Due to the extensive monitoring well network at the site, the damaged wells were abandoned without detriment to the coverage of the well network. Other wells were also damaged during remedial activities, but the damage was not apparent based upon initial observations. The well casing in well OD was damaged below the land surface and no longer useful for sampling. CSI repaired the protective casings at wells 27 and 28.

3.2 Groundwater Sampling

CSI sampled groundwater in accordance with *Groundwater Monitoring Plan for the NL Industries Superfund Site* [CSI, 2003]. CSI (i) measured the depth to groundwater in each well; (ii) monitored field parameters; (iii) obtained groundwater samples; (iv) submitted the samples for laboratory analysis for volatile organic compounds (VOCs), total lead and cadmium, and dissolved lead and cadmium; and (v)

validated the laboratory data. For comparison of data, CSI obtained groundwater samples from the monitoring wells last sampled in 1998, where possible, plus replacement wells KSR, KDR, JDR and 30R. Monitoring wells that were sampled during the January 2004 event are identified in Table 1. CSI evaluated the groundwater quality at the selected wells using field parameters to preliminarily evaluate whether or not the groundwater sample was representative of aquifer conditions.

Prior to sampling, CSI measured water levels at each well. CSI used clean Pro-Active Industries™ submersible pumps to perform low-flow groundwater sampling. Each pump was set at the desired level within the screened portion of each well. Groundwater extraction rates were maintained continually using a surface-mounted controller. Low flow rates were maintained to avoid excessive draw down in each well. CSI used portable equipment to monitor dissolved oxygen (DO), turbidity, specific conductance, oxidation-reduction potential (ORP), pH and temperature. CSI monitored the water quality parameters periodically while purging each well. After the measured values of the parameters stabilized, CSI obtained the groundwater sample.

CSI also obtained samples of tap water from selected residences/commercial properties along U.S. Route 130 (Figure 1). The water quality at the Hodge commercial property (201) and the Butcher (189), Cruz (195), Eyler (167), Gates (197), and Sopko (165, formerly owned by Cassano) residences were evaluated. Where the owner granted access, CSI obtained water samples from taps located in piping prior to any water treatment systems. Purge volumes at the Gates and Sopko residences were limited due to piping configuration.

3.3 Field and Laboratory Analyses

CSI measured water quality parameters in the field to preliminarily evaluate whether or not a groundwater sample was likely to be representative of ambient groundwater. Excess turbidity or wide variations in pH, specific conductance, dissolved oxygen or ORP often indicate abnormalities such as surface water intrusion, or failures in well casing and gravel filter. If obvious abnormalities in field parameter measurements were noted, or if the turbidity of a sample was greater than 1 NTU, then CSI considered the sample to be possibly compromised. If the turbidity exceeded 10 NTUs, then the sample was not considered to be representative of aquifer conditions and the sample was either not analyzed or if it was analyzed the resultant data were qualified. CSI also evaluated the data and made recommendations regarding well use or abandonment after the initial monitoring event.

CSI contracted Chemtech of Mountainside, New Jersey to perform chemical analyses of groundwater samples. The laboratory analyzed the samples for total lead, dissolved lead, total cadmium, and dissolved cadmium using EPA method ILM04.1 and VOCs using EPA method OLC03.2, OLM03.2 and SW-846 8260B. The instrument detection limits for lead and cadmium was as specified by the method. Samples were preserved in accordance with the appropriate EPA method. Samples analyzed for total lead and total cadmium were not filtered. Samples analyzed for dissolved lead and dissolved cadmium were filtered in the laboratory prior to analysis.

3.4 QA/QC and Data Validation

Quality assurance/quality control (QA/QC) procedures were generally consistent with those described in the QAPP. They were modified appropriately to accommodate the use of disposable sampling equipment. Upon receipt of laboratory data, CSI validated the data using EPA standard operating procedures HW 13, Revision 3.2, July 2001 for low-level organics in groundwater and HW 2, Revision 11, January 1992 for metals in groundwater.

The laboratory inadvertently performed method OLM03.2 rather than OLC03.2 for twelve groundwater samples. The laboratory discovered its error and immediately reanalyzed the affected samples using the SW-846 8260B Low-Level method, which provides the method detection limits required by method OLC03.2. Results for only four groundwater samples varied (i.e. 11, 24, KDR, and ND). The results obtained from both analyses are provided in Table 3. Data validation procedures verified that the data are acceptable.

Data validation also indicated that the VOC methylene chloride was apparently detected in several samples and in a field blank and trip blank. Methylene chloride is not related to the site, but is a spurious artifact of the laboratory analyses. Methylene chloride has been flagged "U", non-detect, as a result of data validation. Also, two rinsate blanks, RB-1 and RB-2, were prepared during sampling. However, RB-1 was not properly prepared as freezing weather prevented proper decontamination of the equipment being used in the preparation of the blank. The results for the laboratory analysis of RB-2 are provided in Table 3.

4. RESULTS AND DISCUSSION

The results obtained from the January 2004 groundwater-sampling event are summarized below. Laboratory detection summary sheets are provided in Appendix A. Overall, the trend of improving groundwater quality previously documented has been confirmed and demonstrated to have continued since the last sampling event was performed in 1998. CSI expects that the favorable trend in groundwater quality will continue.

Water Level Measurements

The elevation of the potentiometric surface is provided in Table 1. A water table diagram and the direction of groundwater flow derived from the water level data are shown on Figure 1. Based on measured water levels, groundwater flows northwest across the site in the shallow zone, which is consistent with previous findings. Localized variations in groundwater elevations were noted at the site, which are related to changes in land surface elevations resulting from the removal of soil during the RA. When compared to previous water level data, however, net flow direction is toward the Delaware River, as was previously demonstrated.

Field Parameters

The results obtained from measurement of field parameters are presented on Table 2. As was previously established in the Phase I and II Reports, there are strong correlations between the detection of lead and cadmium in groundwater samples and the pH and turbidity measured during sampling. Where pH is low, the metals concentrations tend to be higher; where turbidity is low, metals concentrations tend to be lower. The variations in groundwater pH are shown in Figure 3.

Volatile Organic Compounds

The VOCs detected in the groundwater samples are summarized in Table 3. Few trends are notable regarding the presence of VOCs in the groundwater samples. VOCs were detected at low concentrations in groundwater samples from only four of the wells sampled. Most of the VOCs were detected at concentrations below applicable health-based standards and criteria. Tetrachloroethene and vinyl chloride were the only VOCs detected at concentrations above health-based standards. Tetrachloroethene was apparently detected in the groundwater sample obtained from MW-11 at a concentration of 2.2 parts per billion (ppb). Vinyl chloride was detected at low concentrations of 3.7 and 4.6 ppb in the groundwater samples obtained from wells MW-12 and MW-24, respectively. MW-12 and MW-24 are screened in the first confined aquifer. Both wells

are located at the eastern and hydraulically up gradient edge of the site, adjacent to the former Exxon property, at which VOCs are known to have been released into the environment.

Metals

As was previously documented, lead and cadmium were detected in some of the groundwater samples obtained. Also as previously documented, the higher concentrations of lead and cadmium were noted in the central portion of the site northwest of the former processing facility. The metals detected are summarized in Table 3. The distribution of lead and cadmium in groundwater is shown in Figures 4 and 5, respectively. The former distribution of lead and cadmium documented at the site is shown in the figures provided in Appendix B. A comparison of Figures 4 and 5 with the respective figures in Appendix B for lead and cadmium reveals that zones of lead and cadmium impacts remain isolated on the site in approximately the same location as was previously detected.

The respective concentrations of total lead and cadmium have generally decreased at each well sampled. Where decreases in the concentrations of total lead and cadmium were not demonstrable, a comparison between total and dissolved concentrations is useful. As was previously documented for both lead and cadmium, dissolved concentrations tend to be lower than total concentrations due to the effects of turbidity in the samples. Based on stationary zones of impact and generally decreasing concentrations, it is evident that lead and cadmium are less prevalent in groundwater. The continued removal of lead and cadmium from groundwater has occurred without active groundwater remediation, as predicted previously.

Commercial/Residential Properties

Lead was detected in the water sample obtained from the Gates and Sopko properties at concentrations that exceeded the action level of 15 ppb for lead in drinking water. The sample of water obtained from the Gates property in 1998 did not contain a detectable concentration of lead. The sample of water obtained from the Sopko (formerly Cassano property) in 1998 contained a lead concentration of 12.6 ppb. Compared to data previously obtained, there are no notable trends in the detections or lack of detections of lead between samples of water obtained from adjacent properties indicating that there has been no intrusion of lead related to the site into the wells located at the private properties evaluated. Furthermore, cadmium, which is prevalent at the site, is clearly absent from the water samples obtained from the private properties.

The data obtained from the analysis of tap water samples from the commercial and residential properties are summarized in Table 4. Given the former and current directions of groundwater flow across the site and the regional flow toward the Delaware River, only four of the six commercial/residential properties evaluated were hydraulically down gradient from the site. As a result of the changes in groundwater flow direction resulting from the RA, none of the residences or commercial properties is directly down gradient from the site. The Butcher, Cruz, Gates and Hodge properties were formerly down gradient from the site. The Eyler and Sopko properties were not and are not down gradient from the site; rather they are hydraulically isolated from the site by the East Stream. Groundwater from the site cannot flow beneath properties that are not hydraulically down gradient. Furthermore, groundwater flowing from the site that does not transport site-related constituents, which was demonstrated to be the case by the stationary zones of impact documented to be present at the site since 1983, cannot adversely impact down gradient properties.

As demonstrated previously, it is clear that site-related constituents have not impacted the water quality at the private properties. The weight of evidence related to the following facts further demonstrates that site related constituents have not migrated in groundwater to the private properties.

- groundwater did not previously flow from the site beneath all of the private properties;
- the zones of impact at the site have not migrated, but have steadily been shrinking for more than twenty years;
- there is no consistency between detections of metals in water samples and the locations of the properties sampled; and,
- there is a decided lack of cadmium in the water samples obtained from the private properties, but cadmium is prevalent at the site.

Had groundwater transported any site-related constituents from the site to the private properties, then a greater degree of consistency between the types of constituents detected and the frequency of detections would have been obvious. Rather, any detection of metals in the water samples obtained from the private properties is related to the plumbing, sampling technique (i.e. purge effectiveness) or laboratory procedures (i.e. possible errant detections). At the Gates and Sopko properties, CSI personnel were limited in performing an effective purge due to the configuration of piping in the residence. Also, the possible, estimated detection of dissolved cadmium (analyzed after filtration) in the sample from the Hodge property is likely a laboratory error, as there was no detection of total cadmium (analyzed prior to filtration) in the sample.

5. CONCLUSION AND RECOMMENDATIONS

CSI monitored groundwater quality at the NL Industries site and water quality at several nearby residential/commercial properties in January 2004. The results presented herein document the continued trend of improving groundwater quality that has been evident since 1983 and which has continued since 1998. Total lead and cadmium concentrations exceed the risk-based criteria in several locations. Also, the concentrations of the VOCs tetrachloroethane and vinyl chloride exceeded risk-based standards in samples obtained from three locations. Previously, detections of lead, cadmium and VOCs were more prevalent than in the January 2004 sampling event. The data presented herein confirm that groundwater quality at the site has, and continues to, improve naturally.

No significant concentrations of site-related constituents were measured off-site. Groundwater is not used on site and its future use can be prevented through institutional controls. Based on the naturally occurring improvement in groundwater quality, the lack of off-site transport of constituents in groundwater and the lack of on-site use of groundwater, it is improbable that humans will be exposed to site related constituents in groundwater. Therefore, the natural rate of improvement in groundwater quality is adequate and there is no apparent need for active groundwater remediation. Continued monitoring will suffice to document improving conditions and protection of human health and the environment.

CSI recommends that the Group continue to monitor groundwater quality on the site. Annual monitoring will be adequate given the improving site conditions. CSI recommends that the wells identified in Table 5 be included in future monitoring. A groundwater-monitoring network comprised of the identified wells is sufficient to document site conditions. Based on favorable results obtained in 1998 and January 2004, CSI does not believe that further monitoring of water from the residential/commercial properties is warranted. CSI also recommends that damaged well OD and other wells not used in future monitoring be abandoned.

6. REFERENCES

CSI Environmental, LLC, *Groundwater Monitoring Plan for the NL Industries Superfund Site*, October 2003.

GeoSyntec Consultants, *Phase I Groundwater Evaluation Technical Memorandum, NL Industries Superfund Site, Pedricktown, New Jersey,* December 1997.

GeoSyntec Consultants, *Phase II Groundwater Evaluation Technical Memorandum, NL Industries Superfund Site, Pedricktown, New Jersey,* January 2000.

GeoSyntec Consultants, *Remedial Design Work Plan, NL Industries Superfund Site, Pedricktown, New Jersey,* December 1997.

Puls and Barcelona, *Low-Flow (Minimal Draw Down) Ground-Water Sampling Procedures,* 1998

TABLES

Table 1
Groundwater Monitoring Locations and Well Construction Details
NL Industries Superfund Site
Pedricktown, New Jersey

Monitoring Well	Casing Diameter	Well Depth [1]	Screened Interval [2]	Top of Casing Elevation [3]	Depth To Water [4]	Groundwater Elevation	Aquifer Zone [5]
BR	4	39	33-39	9.74	4.6	5.14	UA
JS	2	15.37	5-15	12.95	6.23	6.72	UA
JDR	2	27.26	17-27	13.01	6.3	6.71	UA
KSR	2	15	5-15	9.53	3.02	6.51	UA
KDR	2	24	14-24	9.47	3.04	6.43	UA
NS	2	16.5	6.5-16.5	12.17	7.22	4.95	UA
ND	2	24	14-24	11.22	6.5	4.72	UA
OS	2	21.3	6.3-21.3	11.82	6.63	5.19	UA
OD	2	37.3	12.3-37.3	12.3	7.31	4.99	UA
SS	2	16.4	6.4-16.4	11.64	5.57	6.07	UA
SD	2	29.4	17.4-29.4	12.33	6.25	6.08	UA
11	4	54.1	34.1-54.1	9.72	5.5	4.22	UA
22	2	16	11-16	14.16	8.26	5.9	UA
23	2	24	24-34	14	8.04	5.96	UA
26	2	22	12-22	11.86	5.5	6.36	UA
27	2	15	5-15	13.49	7	6.49	UA
28	2	30	20-30	13.98	7.52	6.46	UA
30R	2	28.71	17-27	12.81	6.87	5.94	UA
31	2	15	5-15	14.27	8.46	5.81	UA
32	2	30	20-30	14.22	8.82	5.4	UA
33	2	10	5-10	6.67	3.4	3.27	UA
34	2	20	10-20	6.55	3.13	3.42	UA
12	4	78.2	58.2-78.2	11.79	13.94	-2.15	FCA
24	2	73	68-73	13.13	15.65	-2.52	FCA

[1] Depth to bottom of well in feet below top of casing (TOC).
[2] Screened interval of well in feet below ground surface.
[3] TOC elevation in feet above mean sea level.
[4] Depth to water in feet below TOC, measured in January 2004.
[5] UA = Unconfined Aquifer , FCA = First Confined Aquifer

Table 2
Water Quality of Sampled Wells, January 2004
NL Industries Superfund Site
Pedricktown, New Jersey

Monitoring Well	ORP (mv)	Turbidity (NTU)	D.O. (mg/L)	pH	Conductivity (ms/cm)	Temperature (Deg. C)
BR	207	-10	10.04	5.74	46.2	10.5
JS	235	8	8.08	4.83	23.1	7.5
JDR	253	9	7.09	4.03	34.2	9.3
KSR	382	7	8	3.96	63.3	8.1
KDR	400	0	8.88	2.95	982	9.9
NS	38	9	10.34	6.4	34.1	7.6
ND	73	8	9.22	5.57	131	10.4
OS	53	-10	9.83	5.43	74.6	10.1
OD*	NA	NA	NA	NA	NA	NA
SS	241	6	7.81	5.41	161	7.5
SD	299	7	5.73	3.15	2840	9.3
11	258	-10	9.62	5.4	495	11.7
22	402	3	6.46	3.87	46	9.2
23	427	1	6.61	3.42	135	9.4
26	274	1	6.35	3.89	361	9.4
27	266	1	6.62	4.6	62.3	6.6
28	299	6	5.8	3.93	282	8.8
30R	161	28	7.65	5.78	171	11.6
31	97	1	10.34	6	33.1	9.6
32	60	1	9.52	6.09	33	11.9
33	116	9	7.92	5.68	79.7	8
34	42	430	9.74	6.01	222	9.7
12	89	7	7.74	5.81	82.4	10
24	125	2	7.58	5.93	53.6	10.8

NA = Not Applicable

* Well OD was found to have an obstruction in the well casing and could not be sampled.

Table 3
Data Summary for the January 13-14 and 20, 2004 Monitoring Well Sampling
NL Industries Superfund Site
Pedricktown, New Jersey

	Well Number											QA/QC Samples			Comparison Criteria			
Parameter (ug/L)	11	12	22	23	24	26	27	MW-101**	28	30R	31	RB-2***	FB-2	Trip Blank	RDL	MDL	NJGWQS, NJMCL or PQL	EPAMCL
Inorganics																		
Total Cadmium	416	ND	15.6	74.8	ND	30.8	2.2 J	3.8 J	250	136	ND	ND	0.84 J	NA	5	0.12	4	5
Dissolved Cadmium	415	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	NA	5	0.12	NA	NA
Total Lead	4	4.9	5.7	3.6	4.9	5.6	3 J	3.4	4.2	3.2	34.3	ND	ND	NA	3	0.5	10	15*
Dissolved Lead	5.1	ND	ND	ND	4.3	ND	ND	ND	ND	ND	2.8 J	ND	ND	NA	3	0.5	NA	NA
Organics																		
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.5	2.5	700	NA
Benzene	ND	ND	ND	ND	0.66 J	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	0.14	1	5
Chloroform	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5/1	0.5/0.24	6	80
Isobutane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.7 J	ND	0	0	NA	NA
1,1-Dichloroethene	1.1 J/1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5/1	0.69/0.11	2	2 (7 in ROD)
1,1-Dichloroethane	1.2 J/1.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5/1	0.66/0.01	70	50
cis-1,2-Dichloroethene	1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	0.36	10	70
Methylene Chloride	ND	1.9 U	ND	0.54 U	ND	1.6 U	0.78 U	1.5 U	0.83 U	ND	ND	ND	0.65 U	0.51 U	0.5	0.5	2	5
Tetrachloroethene	1.4 J/2.2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5/1	0.7/0.22	1	1 (5 in ROD)
1,1,1-Trichloroethane	7.8/11	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5/1	0.75/0.14	26	200
Trichloroethene	ND/0.69	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	1	0.27	1	5
Vinyl Chloride	ND	3.7	ND	ND	3.9 J/4.6	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5/1	0.5/0.26	5	2

J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL or RDL) but greater than or equal to the Instrument Detection Limit (IDL or MDL)
U = Parameter was flagged in data validation because of laboratory contamination and are considered non-detects.
* MW-100 is a duplicate sample obtained from monitoring well NS.
** MW-101 is a duplicate sample obtained from monitoring well 27.
*** Two rinsate blanks were collected (RB-1 and RB-2), results from RB-1 are not representative because of the inability to properly collect the sample in the field caused by below freezing temperatures.
N/A = Not Applicable
ND = Non Detect
RDL = Required Detection Limit (Contract)
MDL = Method Detection Limit (Instrument)
MCL = Maximum Contaminant Level
Note: For the organics results, where two values are indicated, the first value indicates the result obtained from method OLM03.2 and the second indicates the result obtained using method SW-846 8260B Low Level.

Table 3 Cont.
Data Summary for the January 13-14 and 20, 2004 Monitoring Well Sampling
NL Industries Superfund Site
Pedricktown, New Jersey

	Well Number														Comparison Criteria			
Parameter (ug/L)	32	33	34	JS	JDR	KSR	KDR	SS	SD	NS	MW-100*	ND	OS	BR	RDL	MDL	NJGWQS, NJMCL or PQL	EPAMCL
Inorganics																		
Total Cadmium	ND	0.45 J	ND	3.9 J	14.8	15.1	97.1	105	134	0.55 J	ND	ND	1.4 J	1.3 J	5	0.12	4	5
Dissolved Cadmium	ND	0.4 J	ND	1.5 J	12.6	15.8	92.8	ND	ND	ND	ND	ND	1.4 J	1.4 J	5	0.12	NA	NA
Total Lead	2.3 J	ND	ND	4	12.6	5	11.9	321	36.8	7.4	9.1	18.8	156	5.6	3	0.5	10	15*
Dissolved Lead	ND	ND	2.4 J	3	6.8	4.1	11.2	ND	ND	2.3 J	3.1	10.6	94.9	3.9	3	0.5	NA	NA
Organics																		
Acetone	ND	ND	ND	ND	ND	ND	ND	ND	15	ND	ND	ND	ND	ND	2.5	2.5	700	NA
Chloroform	ND	ND	ND	ND	ND	ND	0.96 J	ND	0.83	ND	ND	ND	ND	ND	0.5/1.0	0.5/0.24	6	80
Isobutane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0	0	NA	NA
1,1-Dichloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5/1	0.69/0.11	2	2 (7 in ROD)
1,1-Dichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5/1	0.66/0.01	70	50
Methylene Chloride	ND	ND	ND	ND	ND	ND	ND	1.9	2.1	ND	ND	ND	ND	ND	0.5	0.5	2	5
Mehtyl tert-butyl Ether	ND	ND	ND	ND	ND	ND	ND	ND	ND	N	ND	0.34	ND	ND	1	0.49	70	NA
Tetrachloroethene	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5/1	0.70.22	1	1 (5 in ROD)
1,1,1-Trichloroethane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	5/1	0.750.14	26	200
Vinyl Chloride	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.5/1	0.5/0.26	5	2

J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL or RDL) but greater than or equal to the Instrument Detection Limit (IDL or MDL)
U = Parameter was flagged in data validation because of laboratory contamination and are considered non-detects.
* MW-100 is a duplicate sample obtained from monitoring well NS.
** MW-101 is a duplicate sample obtained from monitoring well 27.
N/A = Not Applicable
ND = Non Detect
RDL = Required Detection Limit (Contract)
MDL = Method Detection Limit (Instrument)
MCL = Maximum Contaminant Level
Note: For the organics results, where two values are indicated, the first value indicates the result obtained from method OLM03.2 and the second indicates the result obtained using method SW-846 8260B Low Level.

Table 4
Data Summary for the January 13, 2004 Residential Sampling
NL Industries Superfund Site
Pedricktown, New Jersey

	Residential Samples						QA/QC Samples			Comparison Criteria			
Parameter (ug/L)	Butcher - 189	Cruz - 195	Eyler - 167	Gates - 197	Hodge - 201	Sopko - 165	RB-2*	FB-2	Trip Blank	RDL	MDL	NJGWQS, NJMCL or PQL	EPAMCL
Inorganics													
Total Cadmium	ND	ND	ND	ND	ND	ND	ND	0.84 J	NA	5	0.12	4	5
Dissolved Cadmium	ND	ND	ND	ND	0.5 J	ND	ND	ND	NA	5	0.12	NA	NA
Total Lead	3 J	5.9	7	16.1	6.8	26.3	19.6	ND	NA	3	0.5	10	15*
Dissolved Lead	7.6	4	ND	8.5	ND	3.3	5.2	ND	NA	3	0.5	NA	NA
Organics													
Acetone	NA	NA	NA	NA	NA	NA	ND	ND	ND	2.5	2.5	700	NA
Chloroform	NA	NA	NA	NA	NA	NA	ND	ND	ND	0.5/1	0.5/0.24	6	80
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	ND	ND	ND	5/1	0.69/0.11	2	2 (7 in ROD)
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	ND	ND	ND	5/1	0.66/0.01	70	50
Methylene Chloride	NA	NA	NA	NA	NA	NA	ND	0.65 U	0.51 U	0.5	0.5	2	5
Tetrachloroethene	NA	NA	NA	NA	NA	NA	ND	ND	ND	5/1	0.7/0.22	1	1 (5 in ROD)
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	ND	ND	ND	5/1	0.75/0.14	26	200
Vinyl Chloride	NA	NA	NA	NA	NA	NA	ND	ND	ND	0.5/1	0.5/0.26	5	2

J = The reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL or RDL) but greater than or equal to the Instrument Detection Limit (IDL or MDL)

U = Parameter was flagged in data validation because of laboratory contamination and are considered non-detects.

N/A = Not Applicable

ND = Non Detect

RDL = Required Detection Limit (Contract)

MDL = Method Detection Limit (Instrument)

MCL = Maximum Contaminant Level

* Two rinsate blanks were collected (RB-1 and RB-2), results from RB-1 are not representative because of the inability to properly collect the sample in the field caused by below freezing temp

Note: VOCs were not collected from the residences (I.e. Butcher-195, Cruz-189, etc...)

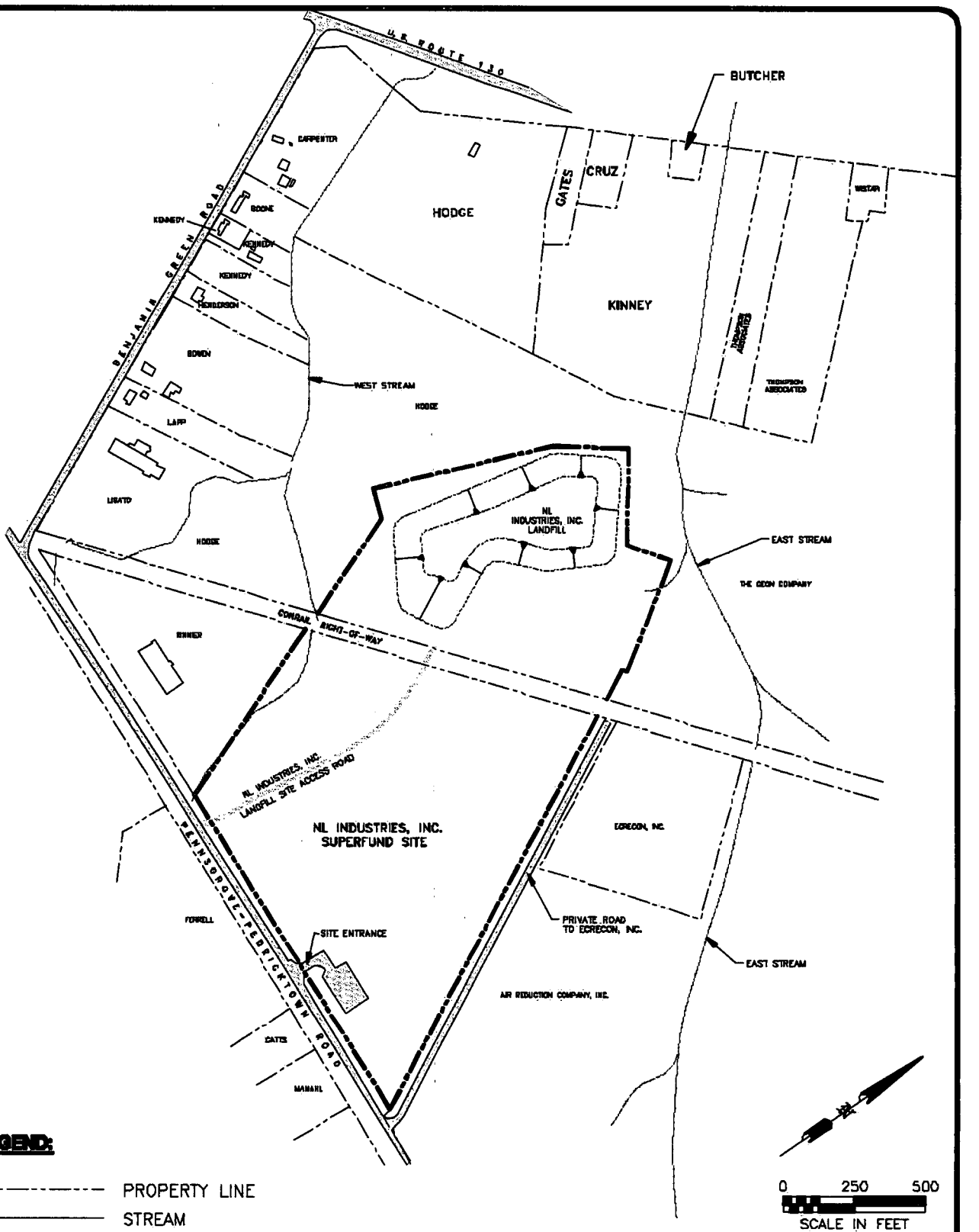
Note: For the organics results, where two values are indicated, the first value indicates the result obtained from method OLM03.2 and the second indicates the result obtained using method SW-846 8260B Low Level.

Table 5
Recommended Groundwater Monitoring Locations
NL Industries Superfund Site
Pedricktown, New Jersey

Monitoring Well	Well Depth [1]	Screened Interval [2]	Aquifer Zone [5]	Rationale
BR	39	33-39	UA	western limits
JS	15.37	5-15	UA	eastern limits
JDR	27.26	17-27	UA	eastern limits
KSR	15	5-15	UA	central area
KDR	24	14-24	UA	central area
NS	16.5	6.5-16.5	UA	western limits
ND	24	14-24	UA	western limits
OS	21.3	6.3-21.3	UA	western limits
SS	16.4	6.4-16.4	UA	central area
SD	29.4	17.4-29.4	UA	central area
11	54.1	34.1-54.1	UA	western limits
22	16	11-16	UA	eastern limits
23	24	24-34	UA	eastern limits
26	22	12-22	UA	northern limts
27	15	5-15	UA	central area
28	30	20-30	UA	central area
30R	28.71	17-27	UA	central area
31	15	5-15	UA	southern limits
33	10	5-10	UA	northern limts

[1] Depth to bottom of well in feet below top of casing (TOC).
[2] Screened interval of well in feet below ground surface.
[3] UA = Unconfined Aquifer

FIGURES



CSI Environmental, LLC
918 Chesapeake Ave.
Annapolis, MD 21403
410-268-2765

Location Plan

NL Industries Superfund Site
Pedricktown, New Jersey

FIGURE
1

APPROVED: C.STEVENS | DRAFTER: J.GOFORTH
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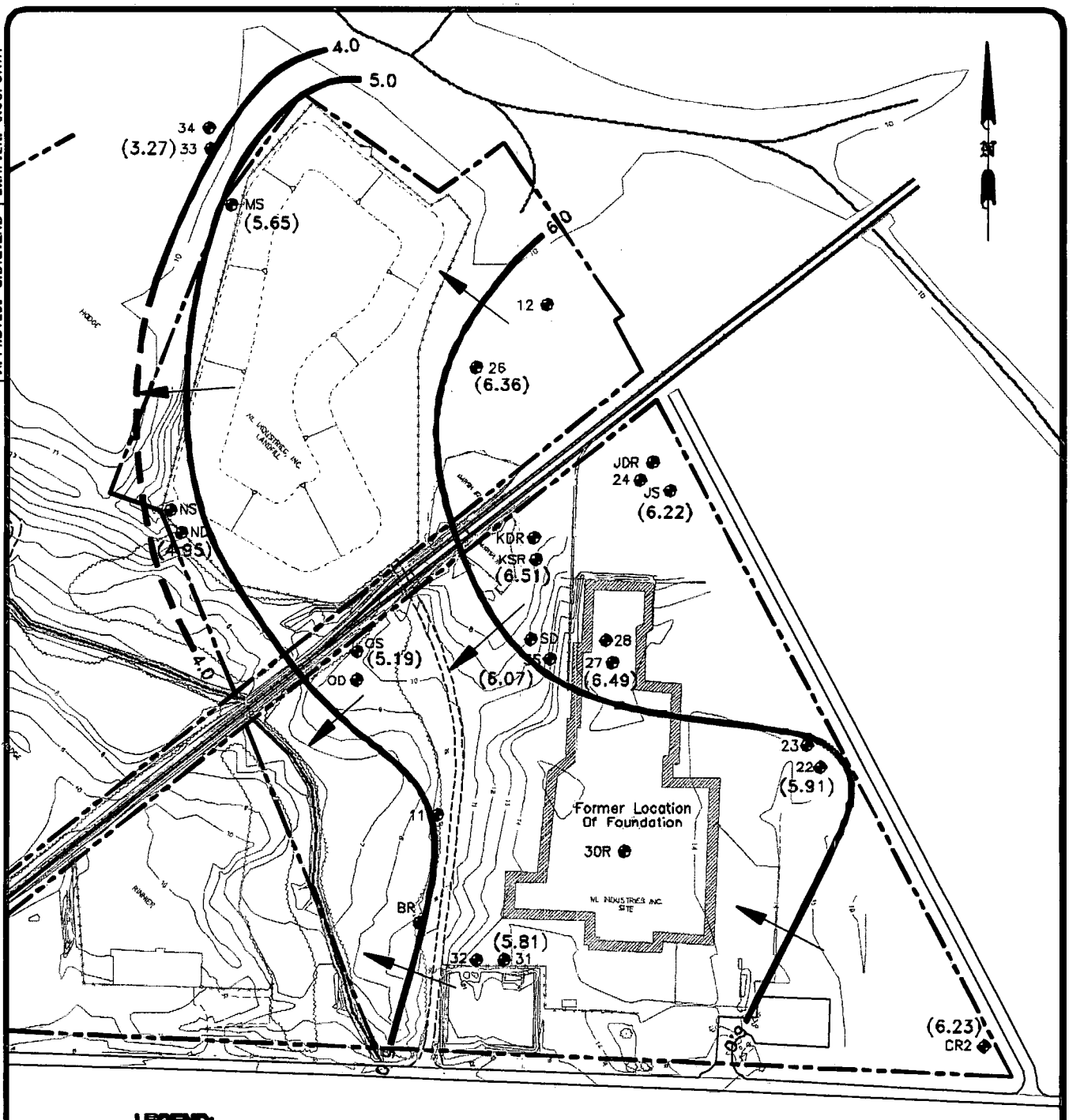


LEGEND:

11 ● MONITORING WELL

6.0 ——— POTENTIOMETRIC SURFACE CONTOUR

←——— GENERALIZED GROUNDWATER FLOW DIRECTION

0 150 300

SCALE IN FEET

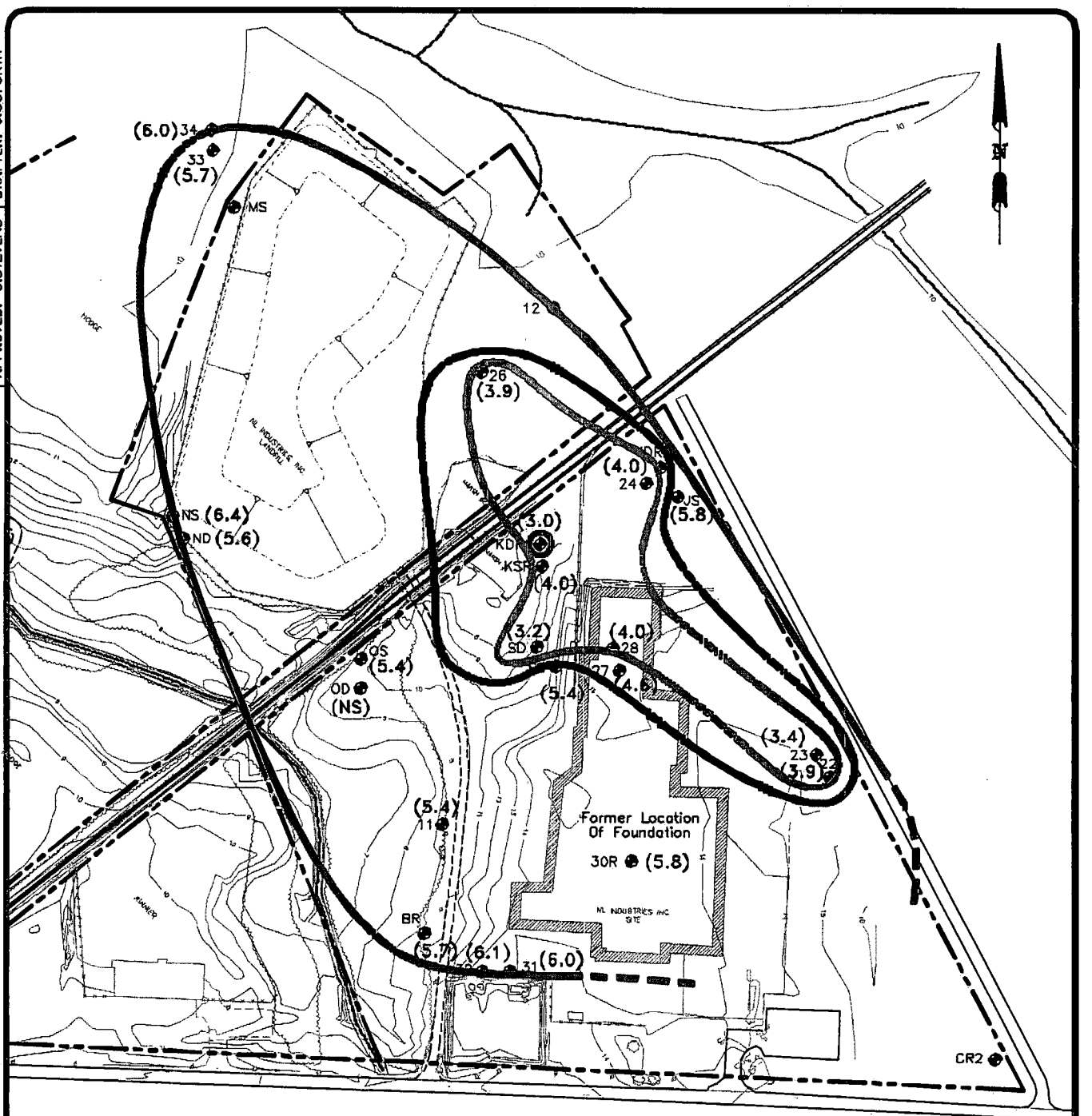
CSI Environmental, LLC
918 Chesapeake Ave.
Annapolis, MD 21403
410-268-2765

Groundwater Table Contour Diagram Unconfined Aquifer

NL Industries Superfund Site
Pedricktown, New Jersey

FIGURE 2

Date\Time : Mon, 12 Apr 2004 - 2:25pm | Path\Name : C:\LIBRARY\cad\NL\SHAL-GW-B.dwg | APPROVED: C.STEVENS | DRAFTER: J.GOFORTH



CSI Environmental, LLC 918 Chesapeake Ave. Annapolis, MD 21403 410-268-2765	**Groundwater pH - 2004** **Shallow Zone** NL Industries Superfund Site Pedricktown, New Jersey	**FIGURE** **3**

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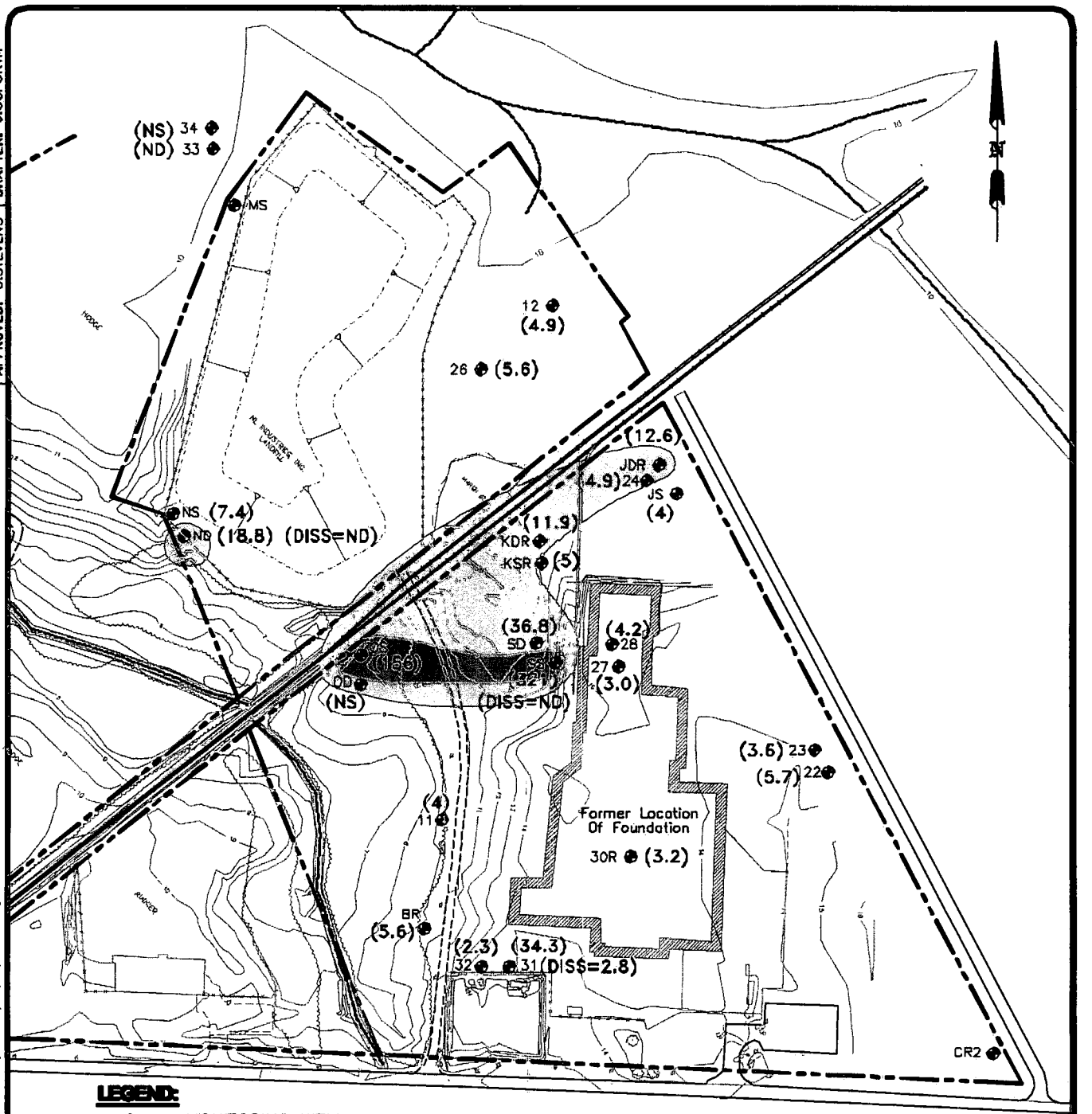

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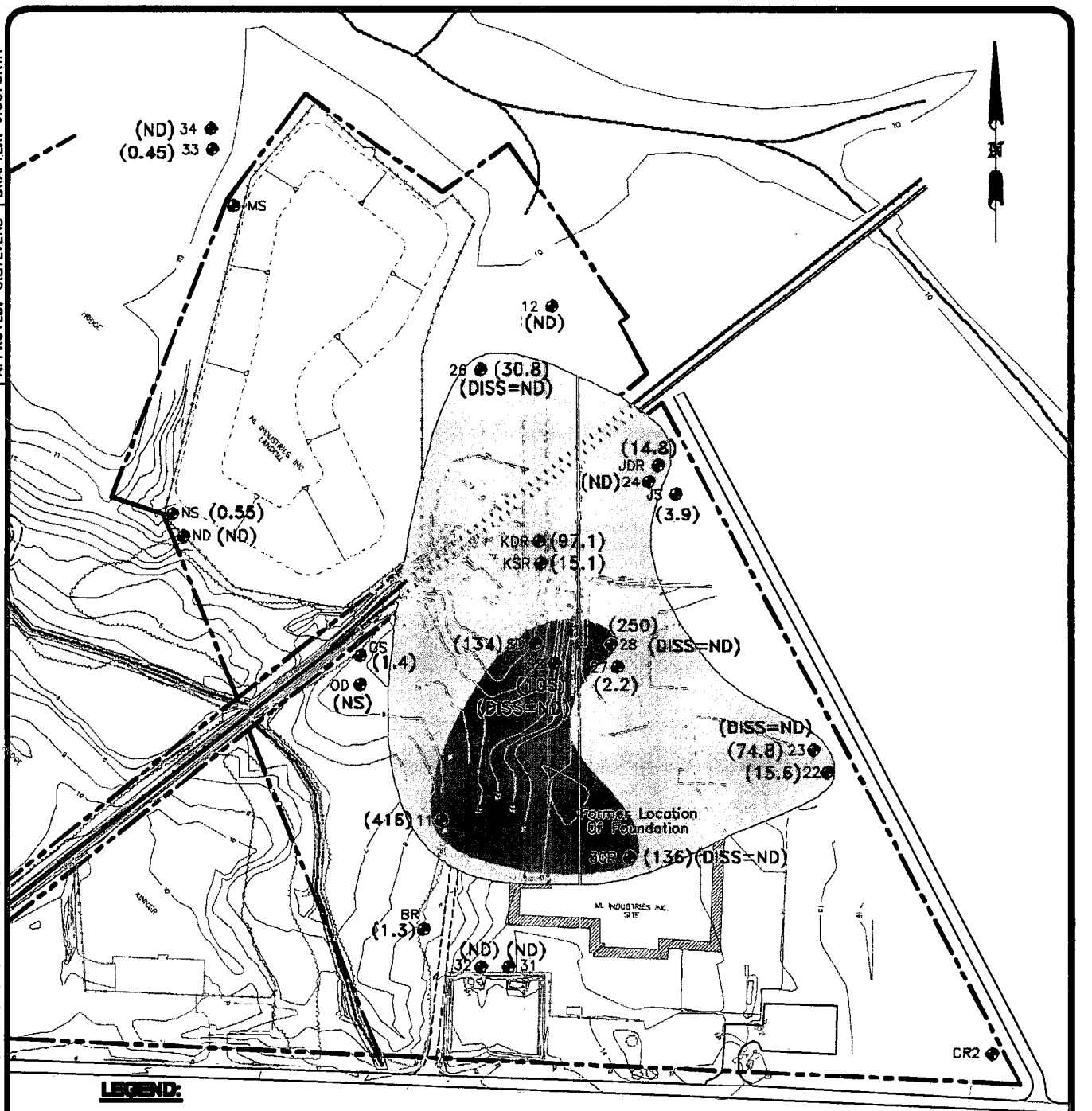
Annapolis, MD 21403
410-268-2765

Total Lead Concentration Unconfined Aquifer - 2004

NL Industries Superfund Site
Pedricktown, New Jersey

FIGURE
4



LEGEND:

11 ●	MONITORING WELL
(4.9)	CADMIUM CONCENTRATION IN (ppb)
(NS)	NOT SAMPLED
(DISS=ND)	DISSOLVED CADMIUM CONCENTRATION (NOT DETECTED)
■	CADMIUM CONCENTRATION, ≥ 100 ppb
■	CADMIUM CONCENTRATION, 4 ppb ≤ and < 100 ppb

CSI Environmental, LLC
918 Chesapeake Ave.
Annapolis, MD 21403
410-268-2765

Total Cadmium Concentration Unconfined Aquifer - 2004

NL Industries Superfund Site
Pedricktown, New Jersey

FIGURE 5

APPROVED: C.STEVENS | DRAFTER: J.GOFORTH
Path\Name : C:\LIBRARY\cad\NL\CADMIUM-B.dwg
Date\Time : Mon, 12 Apr 2004 - 2:50pm

APPENDICES

APPENDIX A

Chemtech Consulting Group

Summary Sheet
SW-846

SDG No.: S1133 Order ID: S1133
Client: Construction Services Int. Project ID: CONS02

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	11							
S1133-03	11	WATER	1,1-Dichloroethene	1.5		1.0	0.11	ug/L
S1133-03	11	WATER	1,1-Dichloroethane	1.5		1.0	0.01	ug/L
S1133-03	11	WATER	cis-1,2-Dichloroethene	1.0		1.0	0.36	ug/L
S1133-03	11	WATER	Chloroform	0.76	J	1.0	0.24	ug/L
S1133-03	11	WATER	1,1,1-Trichloroethane	11		1.0	0.14	ug/L
S1133-03	11	WATER	Trichloroethene	0.69	J	1.0	0.27	ug/L
S1133-03	11	WATER	Tetrachloroethene	2.2		1.0	0.22	ug/L
			Total VOC's:	18.65				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	18.65				
Client ID:	24							
S1133-23	24	WATER	Vinyl chloride	4.6		1.0	0.26	ug/L
S1133-23	24	WATER	Benzene	0.66	J	1.0	0.14	ug/L
			Total VOC's:	5.26				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	5.26				
Client ID:	FIELDBLANK							
S1133-22	FIELDBLANK	WATER	Isobutane *	2.7	J	0	0	ug/L
			Total VOC's:	0.00				
			Total TIC's:	2.70				
			Total VOC's and TIC's:	2.70				
Client ID:	KDR							
S1133-19	KDR	WATER	Chloroform	0.96	J	1.0	0.24	ug/L
			Total VOC's:	0.96				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.96				
Client ID:	ND							
S1133-14	ND	WATER	Methyl tert-butyl Ether	3.4		1.0	0.49	ug/L
			Total VOC's:	3.40				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	3.40				
Client ID:	RB-1							
S1133-12	RB-1	WATER	Isobutane *	2.6	J	0	0	ug/L
			Total VOC's:	0.00				
			Total TIC's:	2.60				
			Total VOC's and TIC's:	2.60				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Summary Sheet
SW-846

SDG No.: S1133 Order ID: S1133

Client: Construction Services Int. Project ID: Construction Services Int

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Units
Client ID:	**11**							
S1133-03	11	WATER	1,1-Dichloroethene	1.1	J	5.0	0.69	ug/L
S1133-03	11	WATER	1,1-Dichloroethane	1.2	J	5.0	0.66	ug/L
S1133-03	11	WATER	1,1,1-Trichloroethane	7.8		5.0	0.75	ug/L
S1133-03	11	WATER	Tetrachloroethene	1.4	J	5.0	0.70	ug/L
			Total VOC's:	11.50				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	11.50				
Client ID:	**24**							
S1133-23	24	WATER	Vinyl chloride	3.9	J	5.0	0.79	ug/L
			Total VOC's:	3.90				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	3.90				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Chemtech Consulting Group

Hit Summary Sheet
SW-846

SDG No.: S1133 Order ID: S1133

Client: Construction Services Int. Project ID: NL Industries

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Unit
Client ID:	**HODGE-201**							
S1133-36	HODGE-201	WATER	Cadmium	0.50	J	5.0	0.12	ug/
S1133-10	HODGE-201	WATER	Lead	6.8		3.0	0.50	ug/
Client ID:	**JDR**							
S1133-47	JDR	WATER	Cadmium	12.6		5.0	0.12	ug/
S1133-21	JDR	WATER	Cadmium	14.8		5.0	0.12	ug/
S1133-47	JDR	WATER	Lead	6.8		3.0	0.50	ug/
S1133-21	JDR	WATER	Lead	12.6		3.0	0.50	ug/
Client ID:	**JS**							
S1133-50	JS	WATER	Cadmium	1.5	J	5.0	0.12	ug/
S1133-50	JS	WATER	Lead	3.0		3.0	0.50	ug/
Client ID:	**KDR**							
S1133-45	KDR	WATER	Cadmium	92.8		5.0	0.12	ug/
S1133-19	KDR	WATER	Cadmium	97.1		5.0	0.12	ug/
S1133-45	KDR	WATER	Lead	11.2		3.0	0.50	ug/
S1133-19	KDR	WATER	Lead	11.9		3.0	0.50	ug/
Client ID:	**KSR**							
S1133-46	KSR	WATER	Cadmium	15.8		5.0	0.12	ug/l
S1133-20	KSR	WATER	Cadmium	15.1		5.0	0.12	ug/l
S1133-46	KSR	WATER	Lead	4.1		3.0	0.50	ug/l
S1133-20	KSR	WATER	Lead	5.0		3.0	0.50	ug/l
Client ID:	**MW-100**							
S1133-51	MW-100	WATER	Lead	3.1		3.0	0.50	ug/l
S1133-25	MW-100	WATER	Lead	9.1		3.0	0.50	ug/l
Client ID:	**ND**							
S1133-40	ND	WATER	Lead	10.6		3.0	0.50	ug/l
S1133-14	ND	WATER	Lead	18.8		3.0	0.50	ug/l
Client ID:	**NS**							
S1133-13	NS	WATER	Cadmium	0.55	J	5.0	0.12	ug/l
S1133-39	NS	WATER	Lead	2.3	J	3.0	0.50	ug/l
S1133-13	NS	WATER	Lead	7.4		3.0	0.50	ug/l
Client ID:	**OS**							
S1133-37	OS	WATER	Cadmium	1.4	J	5.0	0.12	ug/l
S1133-11	OS	WATER	Cadmium	1.4	J	5.0	0.12	ug/l
S1133-37	OS	WATER	Lead	94.9		3.0	0.50	ug/l
S1133-11	OS	WATER	Lead	156		3.0	0.50	ug/l

Hit Summary Sheet
SW-846

SDG No.: S1133 Order ID: S1133

Client: Construction Services Int. Project ID: NL Industries

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Uni
Client ID:	**RB-1**							
S1133-12	RB-1	WATER	Lead	19.6		3.0	0.50	ug/
S1133-38	RB-1	WATER	Lead	5.2		3.0	0.50	ug/
Client ID:	**SOPKO-165**							
S1133-05	SOPKO-165	WATER	Lead	26.3		3.0	0.50	ug/
S1133-31	SOPKO-165	WATER	Lead	3.3		3.0	0.50	ug/

Summary Sheet
SW-846

SDG No.: S1185 Order ID: S1185

Client: Construction Services Int. Project ID: CONS02

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Uni
Client ID:	**12**							
S1185-13	12	WATER	Vinyl chloride	3.7		0.50	0.50	ug/
S1185-13	12	WATER	Methylene Chloride	1.9		0.50	0.50	ug/
			Total VOC's:	5.60				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	5.60				
Client ID:	**23**							
S1185-11	23	WATER	Methylene Chloride	0.54		0.50	0.50	ug/l
			Total VOC's:	0.54				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.54				
Client ID:	**26**							
S1185-14	26	WATER	Methylene Chloride	1.6		0.50	0.50	ug/L
			Total VOC's:	1.60				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	1.60				
Client ID:	**27**							
S1185-03	27	WATER	Methylene Chloride	0.78		0.50	0.50	ug/L
			Total VOC's:	0.78				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.78				
Client ID:	**28**							
S1185-02	28	WATER	Methylene Chloride	0.83		0.50	0.50	ug/L
			Total VOC's:	0.83				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.83				
Client ID:	**FB-2**							
S1185-04	FB-2	WATER	Methylene Chloride	0.65		0.50	0.50	ug/L
			Total VOC's:	0.65				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.65				
Client ID:	**MW-101**							
S1185-08	MW-101	WATER	Methylene Chloride	1.5		0.50	0.50	ug/L
			Total VOC's:	1.50				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	1.50				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Summary Sheet
SW-846

SDG No.: S1185
Client: Construction Services Int.
Order ID: S1185
Project ID: CONS02

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	L
Client ID:	SD							
S1185-05	SD	WATER	Acetone	15		2.5	2.5	u
S1185-05	SD	WATER	Methylene Chloride	2.1		0.50	0.50	u
S1185-05	SD	WATER	Chloroform	0.83		0.50	0.50	u
			Total VOC's:	17.93				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	17.93				
Client ID:	SS							
S1185-09	SS	WATER	Methylene Chloride	1.9		0.50	0.50	ug
			Total VOC's:	1.90				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	1.90				
Client ID:	TRIPBLANK							
S1185-01	TRIPBLANK	WATER	Methylene Chloride	0.51		0.50	0.50	ug
			Total VOC's:	0.51				
			Total TIC's:	0.00				
			Total VOC's and TIC's:	0.51				

Note: The asterisk "*" flag next to a parameter signifies a TIC parameter.

Hit Summary Sheet
SW-846

SDG No.: S1185

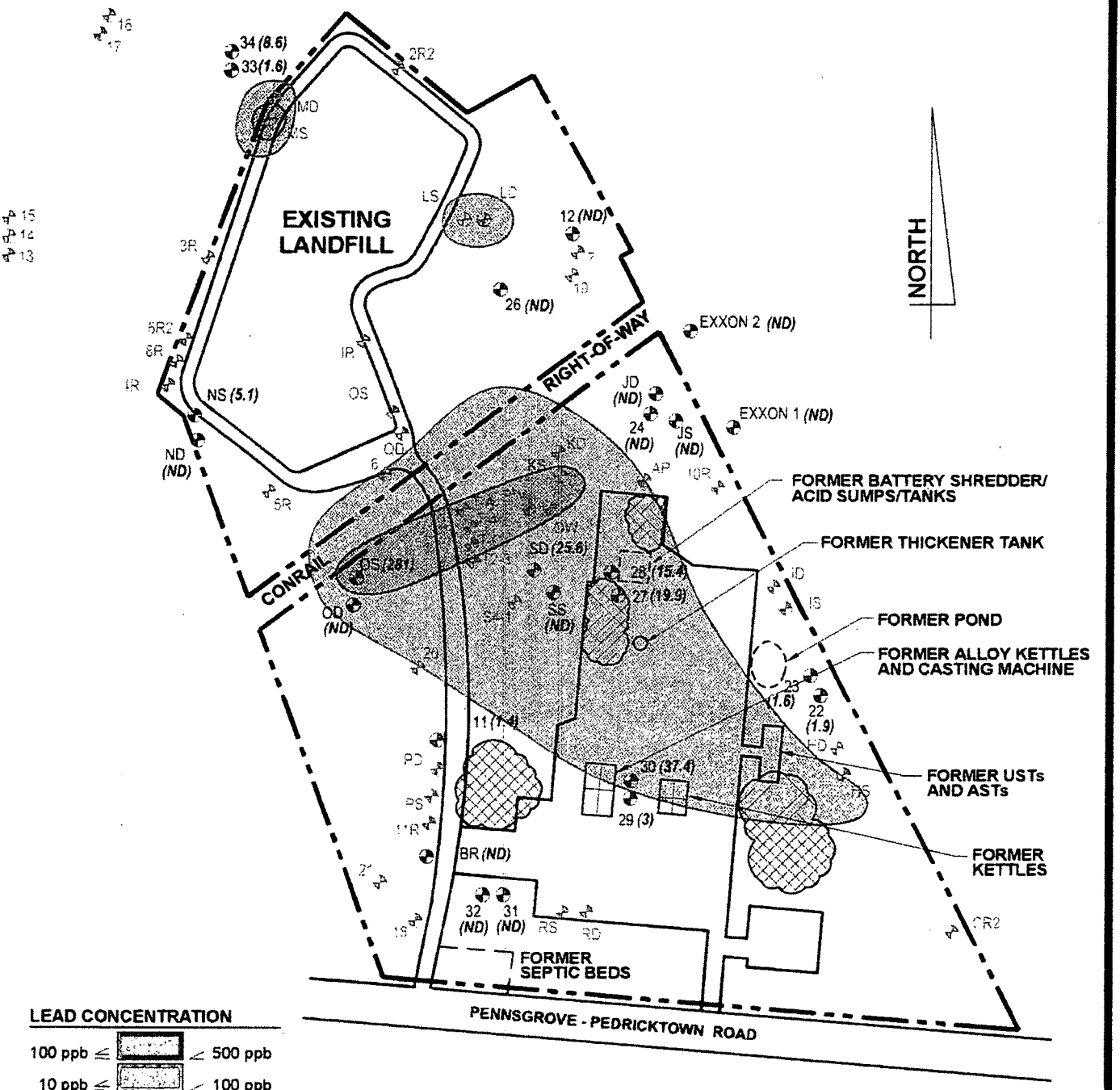
Client: Construction Services Int.

Order ID: S1185

Project ID: NL Industries

Sample ID	Client ID	Matrix	Parameter	Concentration	C	RDL	MDL	Un
Client ID:	**12**							
S1185-13	12	WATER	Lead	4.9		3.0	0.50	ug
Client ID:	**22**							
S1185-10	22	WATER	Cadmium	15.6		5.0	0.12	ug
S1185-10	22	WATER	Lead	5.7		3.0	0.50	ug
Client ID:	**23**							
S1185-11	23	WATER	Cadmium	74.8		5.0	0.12	ug/l
S1185-11	23	WATER	Lead	3.6		3.0	0.50	ug/l
Client ID:	**26**							
S1185-14	26	WATER	Cadmium	30.8		5.0	0.12	ug/L
S1185-14	26	WATER	Lead	5.6		3.0	0.50	ug/L
Client ID:	**27**							
S1185-03	27	WATER	Cadmium	2.2	J	5.0	0.12	ug/L
S1185-03	27	WATER	Lead	3.0	J	3.0	0.50	ug/L
Client ID:	**28**							
S1185-02	28	WATER	Cadmium	250		5.0	0.12	ug/L
S1185-02	28	WATER	Lead	4.2		3.0	0.50	ug/L
Client ID:	**30R**							
S1185-12	30R	WATER	Cadmium	136		5.0	0.12	ug/L
S1185-12	30R	WATER	Lead	3.2		3.0	0.50	ug/L
Client ID:	**FB-2**							
S1185-04	FB-2	WATER	Cadmium	0.84	J	5.0	0.12	ug/L
Client ID:	**JS**							
S1185-15	JS	WATER	Cadmium	3.9	J	5.0	0.12	ug/L
S1185-15	JS	WATER	Lead	4.0		3.0	0.50	ug/L
Client ID:	**MW-101**							
S1185-08	MW-101	WATER	Cadmium	3.8	J	5.0	0.12	ug/L
S1185-08	MW-101	WATER	Lead	3.4		3.0	0.50	ug/L
Client ID:	**SD**							
S1185-05	SD	WATER	Cadmium	134		5.0	0.12	ug/L
S1185-05	SD	WATER	Lead	36.8		3.0	0.50	ug/L
Client ID:	**SS**							
S1185-09	SS	WATER	Cadmium	105		5.0	0.12	ug/L
S1185-09	SS	WATER	Lead	321		3.0	0.50	ug/L

APPENDIX B



LEAD CONCENTRATION

100 ppb ≤ ▭ < 500 ppb

10 ppb ≤ ▭ < 100 ppb

LEGEND

	WELL & DESIGNATION (NOT SAMPLED)
CR2	WELL & DESIGNATION (SAMPLED)
(18)	LEAD CONCENTRATION (PPB)
(ND)	NOT DETECTED
	FORMER SLAG PILELOCATION

300 150 0 300

APPROXIMATE SCALE IN FEET

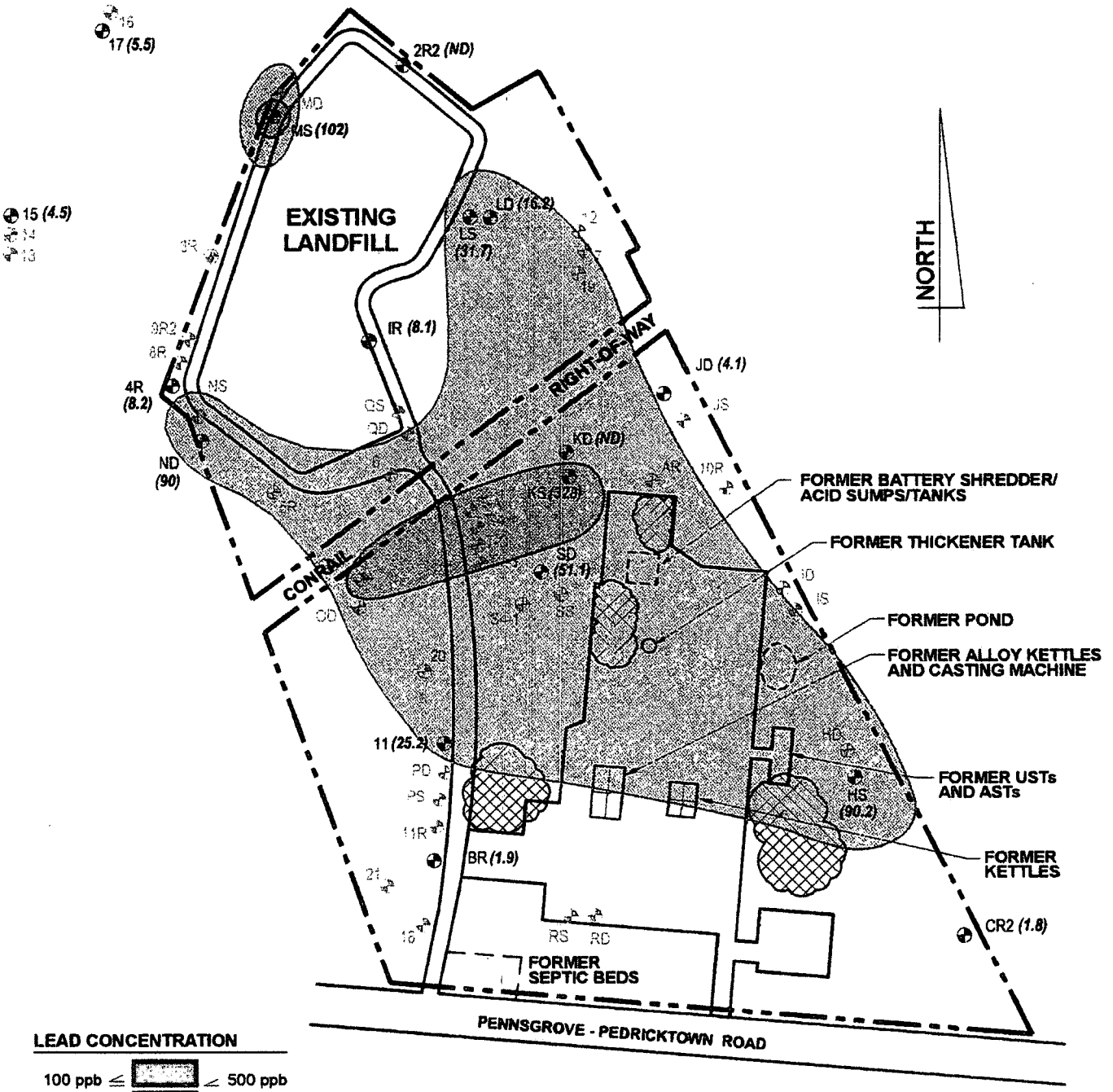
NOTE: ISOCONCENTRATION CURVES SHOWN ARE A REPRESENTATIVE COMPOSITE OF DATA FROM SHALLOW AND DEEP WELLS IN THE UNCONFINED AQUIFER.

Total Lead Concentrations in the Unconfined Aquifer - 1998

NL Industries Site
Pedricktown, New Jersey

GeoSyntec Consultants
COLUMBIA, MARYLAND

FIGURE NO.	7-6
PROJECT NO.	ME0015-15
DOCUMENT NO.	-
FILE NO.	phs2-L98



LEAD CONCENTRATION

100 ppb ≤ ▒▒ < 500 ppb

10 ppb ≤ ▒▒ < 100 ppb

LEGEND

	WELL & DESIGNATION (NOT SAMPLED)
CR2	WELL & DESIGNATION (SAMPLED)
(18)	LEAD CONCENTRATION (PPB)
(ND)	NOT DETECTED
	FORMER SLAG PILE LOCATION

300 150 0 300

APPROXIMATE SCALE IN FEET

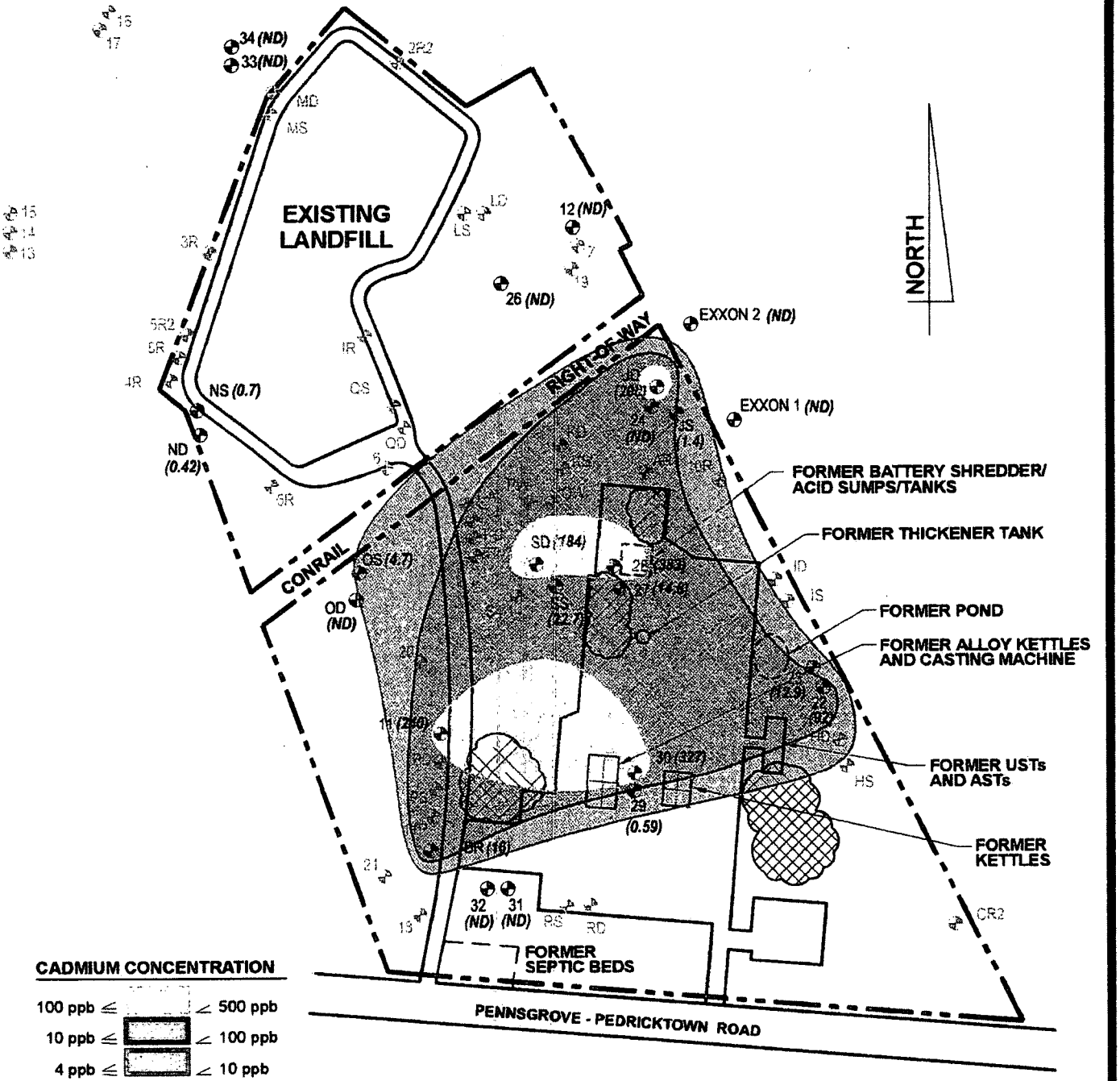
NOTE: ISOCONCENTRATION CURVES SHOWN ARE A REPRESENTATIVE COMPOSITE OF DATA FROM SHALLOW AND DEEP WELLS IN THE UNCONFINED AQUIFER.

Total Lead Concentrations in the Unconfined Aquifer - 1997

NL Industries Site
Pedricktown, New Jersey

GeoSyntec Consultants
COLUMBIA, MARYLAND

FIGURE NO.	7-7
PROJECT NO.	ME0015-15
DOCUMENT NO.	-
FILE NO.	phs2-L97



CADMIUM CONCENTRATION

100 ppb ≤		< 500 ppb
10 ppb ≤		< 100 ppb
4 ppb ≤		< 10 ppb

LEGEND

	WELL & DESIGNATION (NOT SAMPLED)
CR2	WELL & DESIGNATION (SAMPLED)
(8)	CADMIUM CONCENTRATION (PPB)
(ND)	NOT DETECTED
	FORMER SLAG PILE LOCATION

NOTE: ISOCONCENTRATION CURVES SHOWN ARE A REPRESENTATIVE COMPOSITE OF DATA FROM SHALLOW AND DEEP WELLS IN THE UNCONFINED AQUIFER.

300 150 0 300

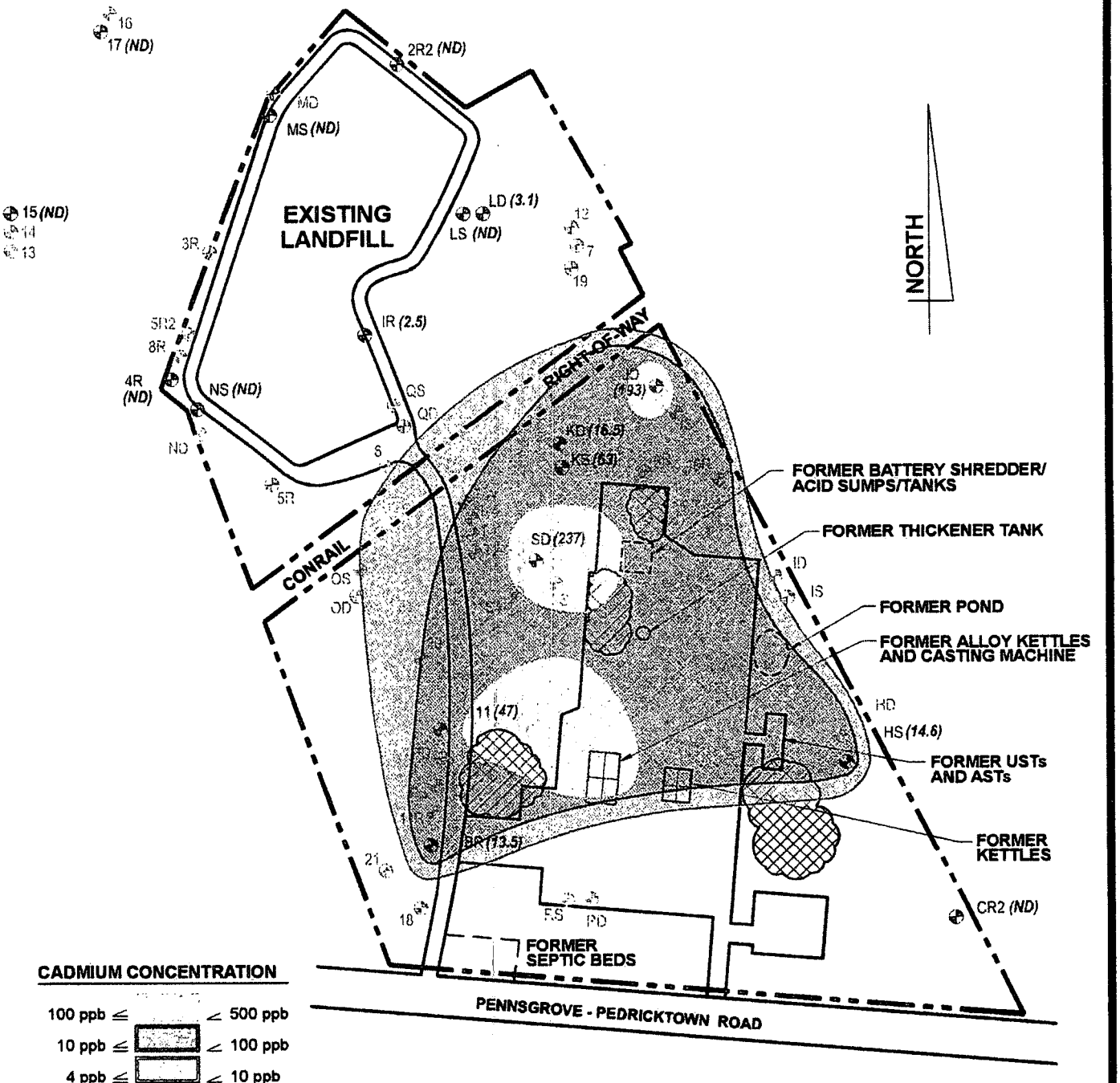
APPROXIMATE SCALE IN FEET

Total Cadmium Concentrations in the Unconfined Aquifer - 1998

NL Industries Site
Pedricktown, New Jersey

GeoSyntec Consultants
COLUMBIA, MARYLAND

FIGURE NO.	7-13
PROJECT NO.	ME0015-15
DOCUMENT NO.	-
FILE NO.	phs2-C98



CADMIUM CONCENTRATION

100 ppb ≤	< 500 ppb
10 ppb ≤	< 100 ppb
4 ppb ≤	< 10 ppb

LEGEND

	WELL & DESIGNATION (NOT SAMPLED)
CR2	WELL & DESIGNATION (SAMPLED)
(8)	CADMIUM CONCENTRATION (PPB)
(ND)	NOT DETECTED
	FORMER SLAG PILE LOCATION

300 150 0 300

APPROXIMATE SCALE IN FEET

NOTE: ISOCONCENTRATION CURVES SHOWN ARE A REPRESENTATIVE COMPOSITE OF DATA FROM SHALLOW AND DEEP WELLS IN THE UNCONFINED AQUIFER.

Total Cadmium Concentrations in the Unconfined Aquifer - 1997

NL Industries Site
Pedricktown, New Jersey

GeoSyntec Consultants
COLUMBIA, MARYLAND

FIGURE NO.	7-14
PROJECT NO.	ME0015-15
DOCUMENT NO.	-
FILE NO.	phs2-C97